http://dx.doi.org/10.4314/jae.v16i2.3

Analysis of Training Needs of Extension Agents on Climate Change Issues in Ekiti State Agricultural Development Project (EKSADP), Nigeria

Adisa R. S.[1] and Balogun K. S.[2]
[1]Department of Agricultural Extension and Rural Development,
University of Ilorin, Ilorin, Nigeria.
+2348037523892
E-mail: rsadisa@unilorin.edu.ng
[2]Lower Niger River Basin Development Authority,
Ilorin, Nigeria

Abstract

The study specifically examined tasks performed by extension agents in the EKSADP as related to climate change and the task areas in which they needed further training. Using structured questionnaire, data were collected from thirty three (33) randomly selected extension agents in the two agricultural zones of Ekiti State. The major tasks performed by the extension agents on climate change related issues were educating farmers on pest control (90.9%), rendering of technical advice to farmers (84.8%), establishment of SPAT to monitor climate change impacts (81.8%) and indigenous technology development to mitigate climate change impacts (81.8%). The training needs in the following areas as perceived by the extension agents were weather forecast skills on climate change ($\bar{x}$=3.76), pest control skills to reduce pest attack ($\bar{x}$=3.72), soil conservation skills to reduce evapo-transpiration ($\bar{x}$=3.58), programme planning on climate change issues ($\bar{x}$=3.45), agro-chemical skills to reduce weed growth ($\bar{x}$=3.36), indigenous technology development for mitigating climate change impacts ($\bar{x}$=3.30), use of cultural practices to mitigate climate change impacts ($\bar{x}$=3.27), use of information communication technologies (ICTs) for awareness creation on climate risk management ($\bar{x}$=3.21) and statistical analysis of field data on climate change issues ($\bar{x}$=3.03). In order to improve performance and increase awareness on climate change impacts on agriculture, extension staff in the various agricultural organizations in the country needed to be trained and re-trained in the relevant areas.

Key words: Analysis, Tasks Performed, Training Needs, Climate Change, Extension Agents, ADP

Introduction

The Intergovernmental Panel on Climate Change (IPCC) reports that societies can respond to climate change by adapting to its effects and reducing greenhouse gas emissions (mitigation), thereby decreasing the rate and magnitude of change (IPCC, 2001). The capacity to adapt and mitigate depends on socio-economic and environmental conditions, and the availability of information and technology. Less information is available about the costs and effectiveness of adaptation measures than about mitigation measures (IPCC, 2007). Agricultural extension is responsible for providing public information and educational programmes that could assist farmers in mitigating the effects of climate change (MOE FRN, 2003). Jibowo (2005) affirmed that the two cardinal objectives of the Agricultural Development Projects (ADPS) were to increase food production and income levels of small scale farmers through well-coordinated agricultural extension services. Thus, the extension system in the country must improve on its activities in order to stay ahead of this global hazard. According to Adisa (2011), the extension sector must rise, albeit in collaboration with other stakeholders, to the challenge of enhancing the knowledge, attitudes and skills of extension agents and the clientele concerning issues that affect agricultural development, including adaptation to the effects of climate change.

There is a need to regularly analyze the technical competence and job performance of extension agents who mediate between agricultural extension institutions and target farmers on agricultural issues. Yondeowei and Kwarteng (2006) define training need as the difference between the required level of individual competence and his present level of competence. Radhakvishna and Thomson (1996) state that extension agents particularly require experiential learning that provides them with opportunities to relate to rural people in an interactive process that combines scientific technical knowledge with local indigenous knowledge in client-centered problem solving activities. However, Allo (2001) points out that one of the main factors limiting the development of effective training programmes for agricultural professionals in developing countries is the inadequacy of information on their training needs.

Purpose and objectives of study

The overall purpose of the study was to analyze the training needs of extension agents on climate change issues in Ekiti State ADP. Specifically, the objectives were to:

- identify tasks performed by extension agents of the EKSADP with regards to climate change issues; and
- determine task areas in which extension agents of the EKSADP needed further training on climate change issues.

Methodology

The study was conducted in Ekiti State Agricultural Development Programme (EKSADP), Nigeria. Ekiti State covers a total area of about 6,353 square kilometers with about 123,000 farm families. For effective extension coverage, EKSADP is divided into two agricultural zones as follows: Aromoko zone (zone 1) and Ikere-Ekiti zone (zone 2), each with 8 blocks. At the time of this study, there were 56 extension agents in EKSADP. A proportionate sample of 60% from each zone was randomly selected to give a total of 33 respondents. A structured questionnaire was the instrument used for data collection.

The study adopted the job or occupational and man analysis. It entails identifying tasks performed by the organizational staff and also identifying the tasks in which staffs require further re-training to perform them well. Data were analyzed using descriptive statistics such as frequency counts, percentage, mean and standard deviation. Training need variables (such as planning demonstrations, use of farmer field schools, evaluation of trials, recording and reporting, and use of information and communication technologies as they relate to climate change issues) were measured using a likert-type-scale. A 4 - point likert-scale ranging from “very much needed” (4), “quite needed” (3), “little needed” (2), to “not at all needed” (1), was used to rate extension agents’ areas of training needs. A mean score of 3.00 and above indicated areas of training needs while a mean score lower than 3.00 indicated areas where trainings were not needed.

Results and Discussion

Personal characteristics of respondents

A summary of the personal characteristics of the respondents is presented in Table 1. It is shown that majority (75.8%) were male. In the past, extension job was reserved for men only, based on the belief that it was only men that were farmers and that only men are needed to reach them (Airemen, 2005). However, women have become increasingly noticeable and their role as farmers are more recognized. Thus, the need to reach the entire farming population in order to achieve increased productivity has necessitated the employment of female extension agents who are believed to be in a better position to reach women farmers.

Table 1 also reveals that more than half (63.6%) of the respondents were in the age bracket of 40 to 49 years, while only 12.1% were 50 years and above. This implies that majority (87.9%) of the extension agents in Ekiti State ADP are less than 50 years. This also means that skills acquired through training and re-training programmes can still be utilized in the organization for at least 15 years. More than half of the respondents were HND holders (60.6%). This was followed by B.Sc (24.2%), M. Sc (9.1%) and a few OND holders (6.1%). It is generally assumed in

Nigeria that extension job is a low-status job fit only for job applicants possessing low academic qualifications (Ejembi, Omoregbee and Ejembi 2006). Results of this study however indicated that extension agents are now well trained in their field. However, further training and re-training will go a long way to enable them respond well to their functions of communicating and assisting farmers to make decisions on adoption of new technologies.

Most (48.5%) of the respondents had working experience as extension agents for between 11 and 20 years. Some (24.2%) had put in 1 - 10 years while the rest (27.3%) had been in the service for over 20 years. The length of service is probably an indicator of a person's commitment to the chosen career (Ejembi, Omoregbee and Ejembi 2006). Frequent training and re-training programmes are needed to be put in place by an organization to strengthen this commitment.

TABLE 1
Selected Personal characteristics of Agricultural Extension Agents in Ekiti State, Nigeria, 2011 (N = 33)

Sex	Frequency	Percentage
Male	25	75.2
Female	8	24.8
Age		
20-29	2	6.1
30-39	6	18.2
40-49	21	63.6
50 years and above	4	12.1
Mean Age = 41.9 years		
Educational level		
OND	2	6.1
HND	20	60.6
B. Sc	8	24.2
M. Sc	3	9.1
Job experience		
1-10 years	8	24.2
11-20 years	16	48.5
21-30 years	7	21.2
Above 30 years	2	6.1

Source: Field data, 2011

Tasks Performed by Respondents

The extension agents were required to indicate the tasks performed by them on climate change related issues. The results are presented in Table 1 which shows 9 major tasks performed by the extension agents out of the 17 examined. These were educating farmers on pest control (90.9%), rendering of technical advice to farmers (84.8%), establishment of SPAT to monitor climate change impacts (81.8%), indigenous technology development to mitigate climate change impacts (81.8%), linkage to credit facilities to enhance mitigation of climate change impacts (78.8%), preparation/use of audio visual instructional materials for teaching issues on climate change (78.8%), statistical analysis of field data on climate change issues (75.8%), assisting subject matter specialists on climate change issues (72.7%) and record keeping on climate change impacts (72.7%). The least performed tasks were use of multi-media projector to teach issues on climate change (36.3%) and educating farmers on soil conservation methods to reduce evapo-transpiration effects (42.4%). The various tasks in relation to climate

change issues identified in Table 1 establish the fact that agricultural extension has gone beyond an extension agent simply walking into a farm and telling a farmer about a new technology. Thus, agricultural extension agents have enormous tasks dealing with the new challenges and threats posed by climate change on agriculture in particular and human existence in general.

TABLE 2
Percentage distribution of on the basis of the tasks performed on climate change related issues by Extension Agents in Ekiti State, Nigeria, 2011 (N = 33)

Task Performed	Frequency	Percentage
1. Educating farmers on pest control	38	90.9
2. Rendering of technical advice to farmers	28	84.8
3. Establishment of SPAT to monitor climate change impacts	27	81.8
4. Linkage to credit facilities	26	78.8
5. Statistical analysis of field data	25	75.8
6. Assisting subject matter specialists	24	72.7
7. Agro-chemical skills training to reduce weed growth	22	66.7
8. Result/method demonstrations for teaching farmers	20	60.6
9. Analyzing farmers' problems on related issues	19	57.6
10. Educating farmers on soil conservation methods	14	42.4
11. Weather forecasting on climate change issues	17	51.5
12. Record keeping on climate change effects/impacts	24	72.7
13. Programme planning on climate change issues	21	63.6
14. Preparation/use of audio visual instructional materials	26	78.8
15. Use of multi- media projector to teach issues on climate Change	12	36.3
16. Indigenous technology development to mitiga	27	81.8
17. Use of information communication technologies (ICTs)	23	69.7

*Source: Field data, 2011; *Multiple responses*

Respondents' areas of training needs on climate change issues

The extension agents were required to rate the skills or job specification in which they required training. The results are presented in Table 2 which shows that the extension agents agreed that they needed training in 9 out of the 11 job descriptions. These were weather forecast skills on climate change ($\bar{x}$=3.76), pest control skills to reduce pest attack ($\bar{x}$=3.72), soil conservation skills to reduce evapo-transpiration effects ($\bar{x}$=3.58), programme planning on climate change issues ($\bar{x}$=3.45), agro-chemical skills to reduce weed growth ($\bar{x}$=3.36), indigenous

technology development for mitigating climate change impacts ($\bar{x}$=3.30), use of cultural practices to mitigate climate change impacts ($\bar{x}$=3.27), use of information communication technologies (ICTs) for awareness creation on climate risk management ($\bar{x}$=3.21) and statistical analysis of field data on climate change issues ($\bar{x}$=3.03).

TABLE 3
Perceptions of Extension Agents in Ekiti, State, Nigeria on areas of training needs concerning climate change issues, 2011 (N = 33)

Training Need	Mean	SD
1. Weather forecast skills on climate change	3.76*	0.43
2. Pest control skills to reduce pest attack	3.72*	0.42
3. Soil conservation methods skills	3.58*	0.70
4. Programme planning for climate change issues	3.45*	0.89
5. Agro-chemical skills to reduce weed growth	3.36*	0.73
6. Indigenous technology development	3.30*	0.72
7. Use of cultural practices to mitigate climate change impacts	3.27*	0.79
8. Use of information communication technologies (ICTs)	3.21*	0.88
9. Statistical analysis of field data on climate change issues	3.03*	0.76
10. Evaluation of trials on climate change related technologies	2.97	0.83
11. Recording and reporting climate change impacts	2.85	0.86

*Source: Field data, 2011, *Significant training need; SD = standard deviation; Cut off = 3.00*

These findings indicate that the identified areas of training needs are very relevant to knowledge and skills required for adequate execution of extension programmes as well as responding to farmers' needs as regards climate change issues. Obibuaku (1983) noted that agricultural extension agents were poorly trained in Nigeria because of the notion that agricultural extension work was simple and any person could perform it. For organizational effectiveness, it is imperative to establish a system of on-the-job training for agricultural extension staff because of continual changes in technologies. Ovwigho and Ifie (2009) noted that on-the-job training was premised on technological changes and need to improve efficiency in the production process. Climate change presents new challenges and threats to food security in most countries especially the developing ones. This demands that extension service brace up to the development by training and re-training its staff to acquire the capability (knowledge and skills) in managing the risks that climate

change poses especially in rural areas where the greater part of agricultural activities take place (Ozor and Nnaji, 2011). Androulitakis and Siardos (2005) also suggested that extension agents' competence should be in accordance with the task areas in which they will be assigned to operate in order to perform successfully; thus advocating for regular in-service training.

Conclusion and Recommendation

The study sought to analyze the training needs of extension agents on climate change issues in Ekiti State ADP. Specifically, tasks performed by them as related to climate change and the task areas in which they needed further training were examined. The major tasks performed include educating farmers on pest control, rendering of technical advice on climate change issues, establishment of SPAT to monitor climate change impacts, linkage to credit facilities to enhance mitigation of climate change impacts, statistical analysis of field data on climate change issues and assisting subject matter specialists on climate change related issues. Results also showed that many extension agents were deficient in the important subject matter areas that are necessary for effective performance on mitigation of climate change impacts. These ranged from pest control skills to use of information communication technologies (ICTs) for awareness creation on climate risk management, which can help to reduce the menace of climate change on agricultural productivity in the study area.

Based on the findings and conclusion reached in this study, it is therefore recommended that:

- Training needs analysis should be carried out for new recruits and also periodically to determine the extension agents' training needs on climate change issues.
- There is a need for collaboration between ADPs and agricultural institutions in reviewing agricultural extension curriculums in the latter that will assist the agricultural extension graduates to acquire the new knowledge and skills (capacity) in climate risk management.
- EKSADP extension agents should be trained in the use of ICTs to facilitate timely and effective communication of climate change related issues to their clientele.
- This study should be repeated at intervals to monitor the changes in needs on climate change issues and classify them in training agricultural extension agents accordingly.

References

Adisa, R.S. (2011). Management of farmer-herdsmen conflicts in Nigeria: Implications for collaboration between agricultural extension service and other stakeholders. *Journal of International Agricultural and Extension Education*, Vol. 18, No. 1, pp 60-72.

Airemen, S.A. (2005). Training needs of extension staff in agriculture: A case study of Edo State Agricultural Development Programme. B.Sc. Project. Department of Agricultural Economics and Extension, Faculty of Agriculture, University of Benin, Benin-City.

Allo, A.V. (2001). Professional requirements of the extension worker in training the extension worker. FFTC Extension Bulletin, No. 173.

Androulitakis, S.I. and Siardos, G.C. (2005). Agricultural extension agents' perception regarding their relevance and competence in certain professional task areas. Jimmy project materials II. 4p. Available at www.jimmyproject.org. Retrieved on March 21, 2011.

Ejembi, E.P., Omoregbee, F.E. and Ejembi, S.A. (2006). Farmers' assessment of the training and visit extension system in central Nigeria: Evidence from Barkin Ladi, Plateau State. *Journal of Social Sciences*. 12 (3), pp. 207-212.

Intergovernmental Panel on Climate Change (IPCC) (2001). Impact, Adaptation and Vulnerability. Contribution of Working Group II of the Intergovernmental Panel on Climate Change to the Third Assessment Report of IPCC. Cambridge University Press. London.

Intergovernmental Panel on Climate Change (IPPC) (2007). The physical science basis. Contribution of Working Group I to the fourth assessment report of the IPCC. Solomon S, Qin D, Manning M, et al, eds. Cambridge University Press, 2007.

Jibowo, A.A. (2005). History of Agricultural Extension in Nigeria. In: Adedoyin, S.F. (ed). *Agricultural Extension in Nigeria*. Ilorin: Agricultural Extension Society of Nigeria, pp.1-15.

Ministry of Environment of the Federal Republic of Nigeria (2003). Nigeria's First National Communication under the United Nations Framework Convention on climate change. Abuja, Nigeria.

Obibuaku, L.O. (1983). *Agricultural Extension as a Strategy for Agricultural transformation* Nsukka: University of Nigeria Press.

Ovwigho, B.O. and Ifie, P.A. (2009). *Principles of Youth Development in Africa.*. Benin-City: Ethiope Publishing Corporation.

Ozor, N. and Nnaji, C. (2011). The role of extension in agricultural adaptation to climate change in Enugu State, Nigeria. Journal of Agricultural Extension and Rural Development Vol. 3(3), pp. 42-50. Also available online http://academicjournals.org/JAERD.

Radhakrishna, R. B and Thomson, J.S. (1996). Extension agents' use of information sources. *Journal of Extension* 34(1), pp. 12-17.

Youdeowei, A. and Kwarteng, J. (2006). Tool kit for the production of agricultural extension materials. Guide book. CTA Wageningen, The Netherlands, pp. 50.